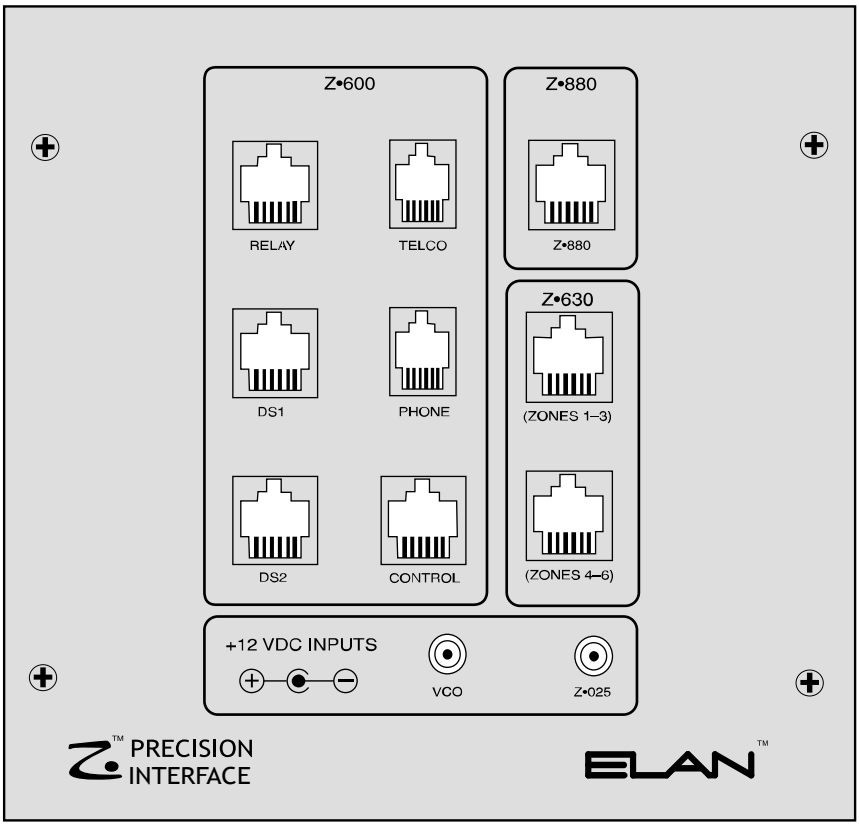
PZ6BX

SYSTEM PRECISION INTERFACE



INSTALLATION MANUAL

ELAN
HOME SYSTEMS

P/N 40615-149-01

WARNING

RISK OF ELECTRIC SHOCK
DO NOT OPEN

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

The lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the device or component.

WARNING: TO REDUCE THE RISK OF FIRE OR SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

IMPORTANT SAFETY INFORMATION

Read Information—All the safety and operating information should be read before the appliance is operated.

Follow Information—All operating and use information should be followed.

Retain Information—The safety and operating information should be retained for future reference.

Heed Warnings—All warnings on the appliance and in the operating instructions should be heeded.

Wall Mounting—Mounting of this appliance should be done only by an authorized installer.

Ventilation—The appliances should be situated so that their location or position does not interfere with their proper ventilation. These appliances should never be placed near or over a radiator or heat register. These appliances should not be placed in a built-in installation such as a bookcase or cabinet that may impede the flow of air through the ventilation openings.

Non-Use Periods—Appliances that are left unattended and unused for long periods of time should be de-energized.

Power Sources—The appliances should be connected to a power supply only of the type described in the operating instructions or as marked on each appliance. If you are not sure of the type of power supply to your home, consult your authorized ELAN dealer or local power company.

Grounding or Polarization—These audio products must be connected to a grounding-type alternating-current circuit on a dedicated citcuit breaker. This is a safety feature. The green safety wire from the A.C. circuit must be connected.

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WARNING

RISK OF ELECTRIC SHOCK
DO NOT OPEN

Water and Moisture—To reduce the risk of electric shock or fire, these appliances should not be used near water—for example, near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool.

Power Cord Protection—A.C.Power supply circuits should be routed by a certified electrician only, in accordance with the NEC standards.

Telephones—Avoid using a telephone (other than a cordless type) during an electrical storm. There may be a remote risk of electrical shock from lightning. Do not use a telephone to report a gas leak if the leak is in the vicinity of the ELAN electronic equipment because of risk of fire or explosion.

Cleaning—Turn off the circuit breaker to this audio product before cleaning. Do not use liquid or aerosol cleaners. Use a damp cloth for cleaning.

Power Lines—An outdoor antenna should be located away from power lines. When installing an outside antenna system, extreme care should be taken to avoid touching power lines or circuits, as contact with them may be fatal.

Outdoor Antenna Grounding—If an outside antenna or cable system is connected to these audio products, be sure the antenna or cable system is grounded so as to provide some protection against voltage surges and built-up static charges. Section 810 of the U.S. National Electrical Code, and Section 54 of the Canadian Electrical Code, provide information with respect to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna-discharge unit, connection to grounding electrodes, and requirements for the grounding electrode. See the grounding diagram (right).

Overloading—Do not overload wall outlets and extension cords, as this could result in fire or electric shock.

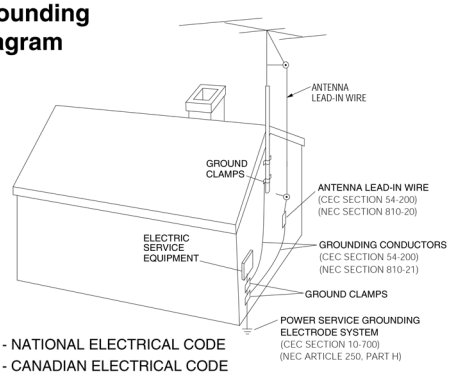
Object and Liquid Entry—Never insert objects of any kind through the openings of these appliances, as they may touch dangerous voltage points or short-out parts that could result in a fire or electric shock. Care should be taken so that objects do not fall and liquids are not spilled into the appliance through openings in the enclosure.

Servicing—Do not attempt to service these appliances yourself, as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.

Damage Requiring Service—These appliances should be serviced by qualified service personnel when:

- A power supply connection or a plug has been damaged or
- If liquid has been spilled into the appliance or objects have fallen into the appliance or
- The appliance has been exposed to water or moisture or
- The appliance does not appear to operate normally or exhibits a marked change in performance or
- The appliance has been dropped or the enclosure damaged.

Grounding Diagram



Replacement Parts—When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or that have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock, or other hazards. The Master Control Unit battery should be replaced only after turning the power off and only by an authorized installer.

Safety Check—Upon completion of any service or repairs to this audio product, ask the service technician to perform safety checks to determine that the audio product is in proper operating condition.

Lightning—For added protection for these audio products during an electrical storm, or when they are left unattended and unused for long periods of time, turn off the circuit breaker, and disconnect the antenna or cable system. This will prevent damage to the audio products due to lightning and power-line surges.

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INTRODUCTION

The PZ6BX Precision Interface was created to make the installation of ELAN Z•Series Multi-Source/Multi-Zone systems literally 'plug-and-play'. Like the entire family of ELAN Essentials products, the PZ6BX was designed with the custom installer in mind. Its goal — to cut hours off of every Z•Series installation and assure that all system wire runs and Z•Series components are connected properly first time, every time.

FEATURES

- **Front panel RJ45 jacks** - These jacks accommodate the connection of all ELAN Z•Series components, including multiple Z•630 systems of up to 12 zones (systems using three or four Z•630s will require two PZ6BXs).

  ELAN's new line of Essential Cables include 1 and 2 meter RJ45-to-RJ45 interconnects to simplify all of your connections.

- **Eliminates the need for 'butt-splicing' connections -** The PZ6BX completely eliminates the need for numerous 'butt-splices' normally required to interconnect ELAN Z•Series components and VIA! Panels. The PZ6BX's PC boards facilitate the connections between ZPADS, the Z•630 PreAmp Controller, the Z•600 Comm Controller and the Z•880 Video Controller, enabling each device to 'talk' to the others.

- **Standard 110 punchdown connectors -** The PZ6BX's circuit board features standard 110 punchdown connectors for every Z•Series wire run, including Z•PADs, Z•025 modules, Door Speaker Assemblies, Relays, Volume Control Overrides, and Telephone connections.

- **Clearly labeled front and rear silk-screening** - The front of the PZ6BX is clearly silk-screened to make the connection of Z•Series components quick and easy. The internal circuit board is also labeled with the name and function of each punchdown connection. To make things even easier, a rear panel color-code overlay is included with each PZ6BX. Just match up every Z•PAD, Door Speaker Assembly, and Relay wire to the corresponding connector and punch it down!

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Z•SERIES WIRE RUNS

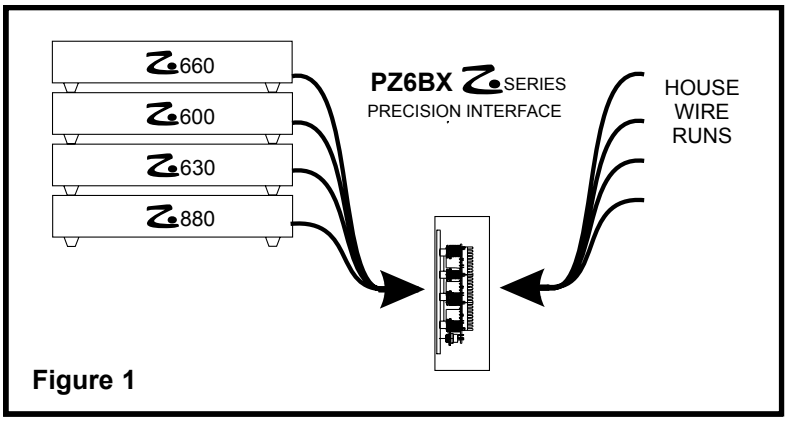
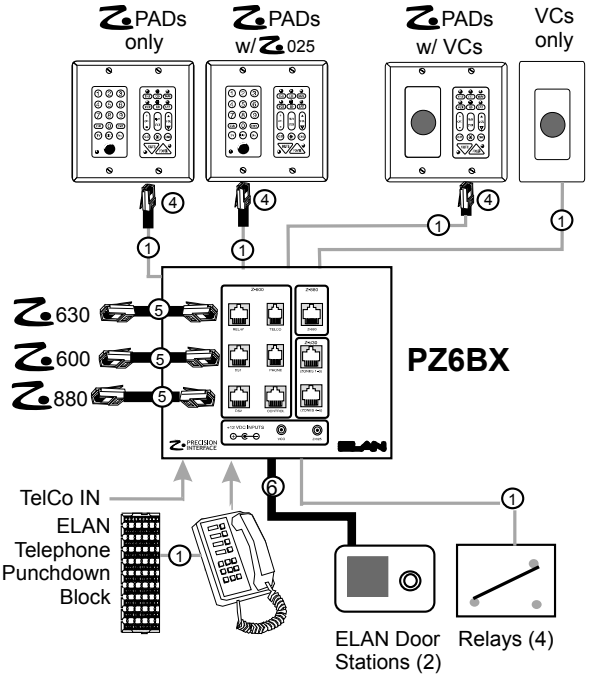


Figure 1



① CAT-5 four twisted pair (8 conductor), unshielded telephone cable, 24 AWG minimum

② 1 or 2 twisted pair (2 or 4 conductor) stranded audio cable, 18 AWG min.

③ RG-6 coaxial cable (for all RF Video runs)

④ ELAN C45P RJ-45 to pig-tails Interface Cable

⑤ ELAN C4545 1M or 2M RJ-45 to RJ-45 Interface Cable

⑥ Four twisted-pair (8 conductor) shielded cable with drain, 24 AWG minimum

⑦ Two twisted-pair (4 conductor) shielded cable with drain, 24 AWG minimum

⑧ ELAN CZV 1M or 2M Video Interconnect Cable

⑨ RG59 or RG6 coaxial cable (for Composite Video runs)

Figure 2

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INSTALLATION

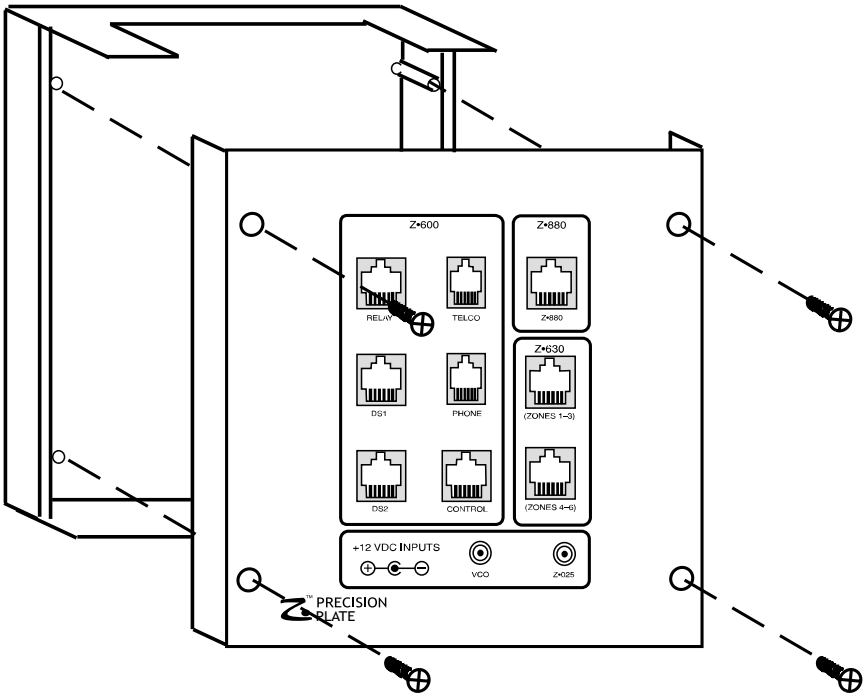

Figure 3 - The PZ6BX's enclosure opens up to enable connections to be punched down to its printed circuit board. Additionally, the rear of the PZ6BX chassis features keyhole slots to enable it to be mounted to a wall or cabinet and easily removed if necessary.

CONNECTIONS

INTERCONNECT CABLES

ELAN now carries a variety of interconnect cables for use with the PZ6BX as well as other Audio/Video applications.

C45P	2 meter RJ-45 to Pigtails
C45451	1 meter RJ-45 to RJ-45
C45452	2 meter RJ-45 to RJ-45
CZP	9 inch Stereo Patch Cable
CZP1	1 meter Stereo Patch Cable
CZP2	2 meter Stereo Patch Cable
CZY	9 inch "Y" cable with 3 male RCA plug ends
CZV1	1 meter Video Patch Cable
CZV2	2 meter Video Patch Cable
BJACK	Gold-Plated banana Plugs
CSM2	Cable Suite

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CONNECTIONS

RJ-45 PIN OUT

Should you prefer to terminate your own RJ45 cables, refer to the diagram below for the correct pin-out.

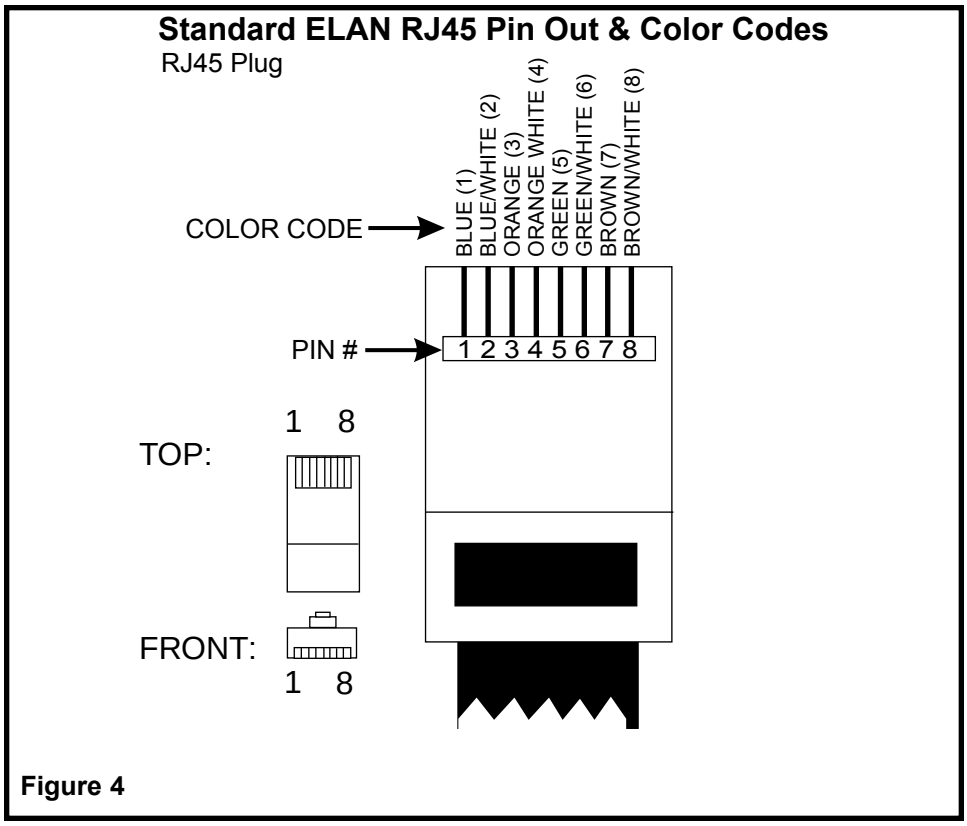

Figure 4

PZ6BX PUNCHDOWN CONNECTORS

The back of the PZ6BX features standard 110 punchdown connectors for all Z•System wire runs (with the exception of VIA! Panels, speakers and coax). Wires do not need to be stripped prior to punchdown as the insulation will automatically be displaced. Each punchdown row will accept two 24 or 22 AWG solid conductor wires. *Use of a 110 punchdown tool is recommended.*

NOTE: *The PZ6BX also comes with punchdown caps to ensure that wiring connections won't come loose.*

Punchdown Connector

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CONNECTIONS

The PZ6BX features two ways for you to reference all your connections:

- Using the silk screen on the PC board
- Using the Color-Code Overlay

Be sure to double check all your punch-downs to ensure that all wires have been punched down to the proper position, and that good electrical connections have been made.

PZ6BX CONNECTION SILK SCREEN & OVERLAY

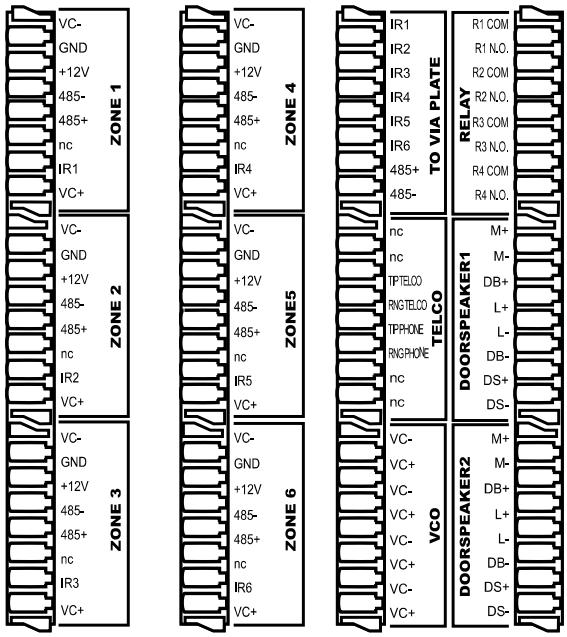

Figure 5 - The PZ6BX's PC board silk-screening gives you the exact name-by-name connections for each wire.

PZ6BX CONNECTION COLOR-CODE OVERLAY

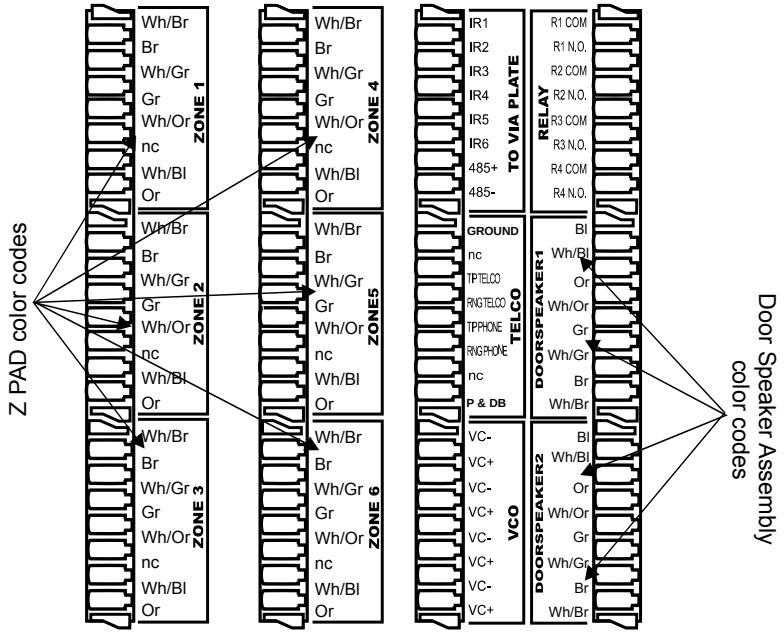

Figure 6 - The PZ6BX's color code overlay provides a color-coded reference for ZPAD and Doorspeaker Assembly connections.

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CONNECTIONS - CONT.

These same connections are used for zones 7-12 on the second PZ6BX if utilized.

Z•PAD CONNECTIONS TO THE PZ6BX PC BOARD

There are six keypad punchdown connectors provided on the PZ6BX's PC board - one for each of the six possible zones in a Z•System. The six keypad punchdown connectors are labeled Zone 1 thru Zone 6.

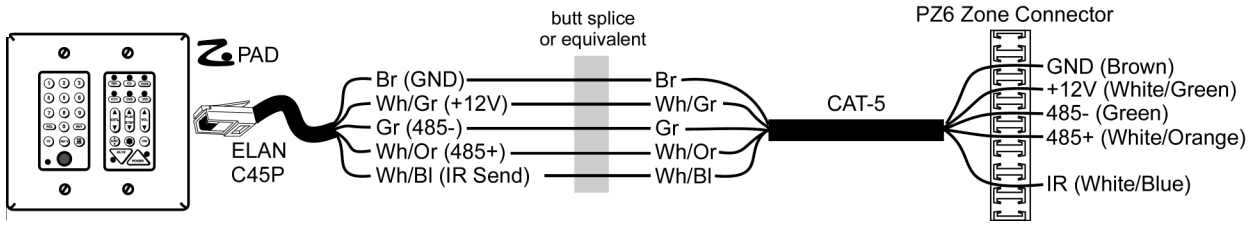


Figure 7

INSTALLATION TIP - Use the color-code overlay to ensure correct Z•PAD punchdown connections.

CONNECTING MORE THAN ONE Z•PAD PER ZONE

Two 22 or 24 AWG solid conductor wires can be punched down into each row of the connector, making it easy to connect two Z•PADs per zone. If using more than two Z•PADs in one zone, the keypad wires would need to be spliced to a lead wire which would then be punched down to the connector.

***NOTE:** A maximum of six ZPADS may be connected to one Z630 Preamp Contoller*

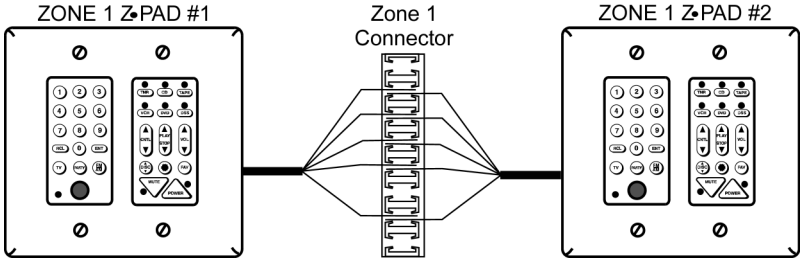
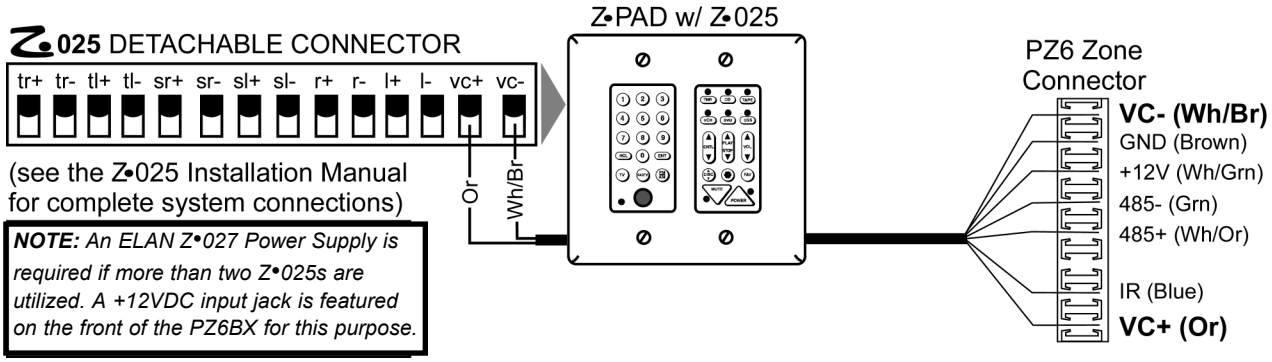


Figure 8

Z•025 SPEAKER RELAY/AB SENSING MODULE

When using Z•025 Speaker Relay/AB Sensing Modules in conjunction with Z•PADs, the Zone punchdown connectors on the PZ6BX provide the necessary connections for the VC+ and VC- wires that enable Page and Doorbell override control. Use two of the remaining conductors from the CAT-5 keypad wire run (Orange for VC+ and White/Brown for VC-) to make this connection.



***NOTE:** An ELAN Z•027 Power Supply is required if more than two Z•025s are utilized. A +12VDC input jack is featured on the front of the PZ6BX for this purpose.*

Figure 9

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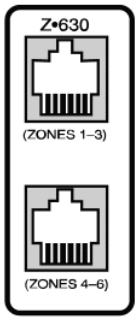
CONNECTIONS - CONT.

Z•630 PREAMP CONTROLLER CONNECTIONS

PZ6BX FRONT PANEL CONNECTIONS



SINGLE Z•630 (3 ZONE SYSTEM)
Using a RJ45-to-RJ45 interconnect cable (ELAN C4545 1M or 2M), connect the jack labeled IR INPUTS on the back of the Z•630 to the jack labeled Z•630 Zones 1-3 on the front of the PZ6BX.

DUAL Z•630 (6 ZONE SYSTEM)

1. Using a RJ45-to-RJ45 interconnect cable (ELAN C4545 1M or 2M), connect the jack labeled IR INPUTS on the back of Z•630 #1 (Zones 1-3) to the jack labeled Z•630 Zones 1-3 on the front of the PZ6BX.

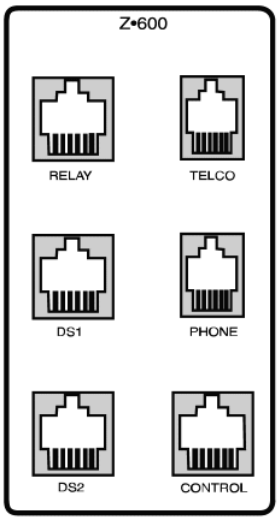
2. Using a RJ45-to-RJ45 interconnect cable (ELAN C4545 1M or 2M), connect the jack labeled IR INPUTS on the back of Z•630 #2 (Zones 4-6) to the jack labeled Z•630 Zones 4-6 on the front of the PZ6BX.

MULTIPLE Z•630 (9 or 12 ZONE SYSTEM)

Using a RJ45-to-RJ45 interconnect cable (ELAN C4545 1M or 2M), connect the jack labeled IR INPUTS on the back of Z•630 #3 (Zones 7-9), to the jack labeled Z•630 Zones 1-3 on the front of the SECOND PZ6BX. *Repeat for Zones 10-12 (Z•630 #4) and connect to the jack labeled Zones 4-6 on the SECOND PZ6BX.* ***NOTE:*** *See diagrams on pages 11 and 12 for information on wiring two PZ6BXs together.*

Z•600 COMM CONTROLLER CONNECTIONS

PZ6BX FRONT PANEL CONNECTIONS



There are six RJ45 connections for the Z•600 Comm Controller on the PZ6BX: TELCO, PHONE, RELAY; CONTROL, DS1 and DS2.

PHONE SERVICE CONNECTIONS - Using RJ11-to-RJ11 interconnect cables, connect the jack labeled TELCO IN on the Z•600 to the jack labeled TELCO on the PZ6BX; and the jack labeled PHONE OUT on the Z•600 to the jack labeled PHONE on the PZ6BX.

RELAY - The RELAY interface must be used if using any of the four telephone-activated contact closures that are available from the Z•600 are to be utilized. Using a RJ45-to-RJ45 interconnect cable (ELAN C4545 1M or 2M), connect the jack labeled RELAY 1-4 OUTPUTS on the Z•600 to the jack labeled RELAY on the PZ6BX.

NOTE: *If two PZ6BXs will be used to accommodate a multiple Z•630 system, all Z•600 connections are made to the first PZ6BX only. See pages 11 and 12 for details on wiring two PZ6BXs together.*

CONTROL - The CONTROL interface must be made when you are using ELAN Volume Controls with Override. Using a RJ45-to-RJ45 interconnect cable (ELAN C4545 1M or 2M), connect the jack labeled CONTROL OUTPUTS on the Z•600 to the jack labeled CONTROL on the PZ6BX.

DS1/DS2 - The Z•600 provides connections for 2 ELAN Door Speakers. Using RJ45-to RJ45 interconnect cables (ELAN C4545 1M or 2M), connect the jack(s) labeled DOOR SPEAKER 1 and DOOR SPEAKER 2 on the back of the Z•600 to the corresponding jack(s) labeled DS1 and DS2 on the PZ6BX.

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CONNECTIONS - CONT.

Z•600 COMM CONTROLLER CONNECTIONS

PZ6BX REAR PANEL CONNECTIONS

TELEPHONE SERVICE AND HOUSE CONNECTIONS

1. Connect the incoming telephone service TIP and RING to the PZ6BX's TELCO punchdown connectors labeled TIP TELCO and RING TELCO.
2. Connect the PZ6BX's TELCO punchdown connectors labeled TIP PHONE and RING PHONE to the appropriate line on the telephone punch down block.
3. Connect the home's telephone wall plates to the puchdown block.

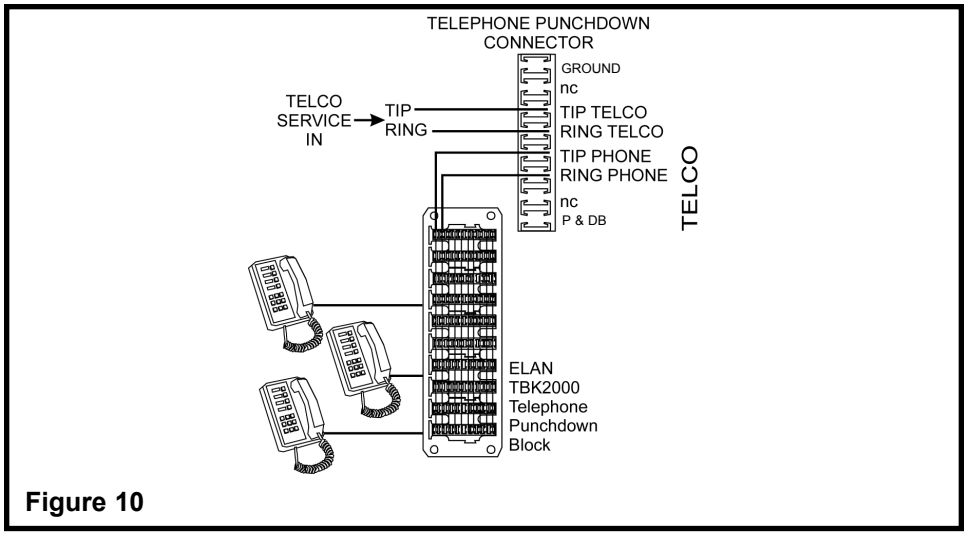

Figure 10

DOOR SPEAKER ASSEMBLY CONNECTIONS

There are two punchdown connectors on the back of the PZ6BX (labeled DOOR SPEAKER 1 & DOOR SPEAKER 2) for the connection of ELAN Door Speaker Assemblies. The Z•600 can access each of the door stations independently. ***NOTE:*** *See the Z•600 User's Manual for additional information.*

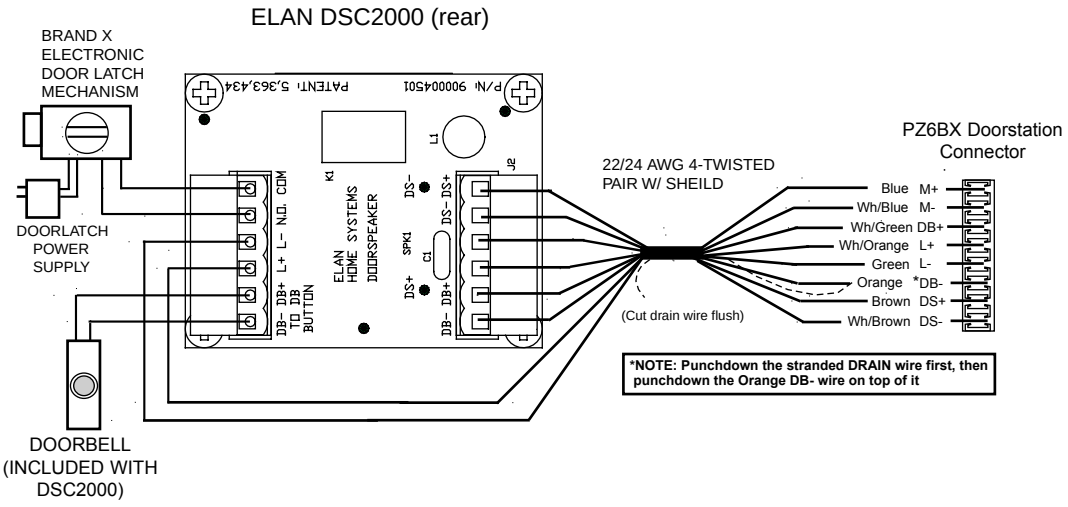

Figure 11

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CONNECTIONS - CONT.

Z•600 COMM CONTROLLER CONNECTIONS-*cont.*

PZ6BX REAR PANEL CONNECTIONS (continued)

RELAY CONNECTIONS

The Z•600 can activate up to four low voltage relays via the telephone (#,1,1) (#,1,2) (#,1,3) (#,1,4) for control of lighting, automatic doors, sprinkler systems, etc. A dedicated punchdown connector is provided on the back of the PZ6BX for this purpose. The diagram below shows the connections to the PZ6 RELAY punchdown connector on the rear of the PZ6BX.

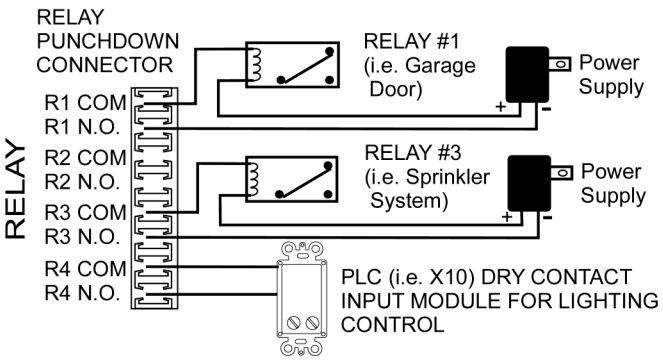

Figure 12

CONNECTING ELAN VOLUME CONTROLS WITH OVERRIDE TO THE PZ6BX

The PZ6BX features a dedicated punchdown connectors for terminating ELAN Volume Controls with Override. Simply punch down the VC+ and VC- wires coming from each volume control with override to the VC+ and VC- connector on the PZ6BX. ***NOTE:*** *Be sure to maintain proper polarity.*

USING THE Z•600 COMM CONTROLLER'S INTERNAL POWER SUPPLY FOR OVERRIDE CONTROL.

A maximum of two volume controls with override may be connected to the Z•600s internal power supply. If additional volume controls with override are needed, an external +12VDC power supply (ELAN Z•027) will be required.

NOTE: *If a Z•027 power supply is utilized, a maximum of 32 volume controls with override may be connected. MORE INFORMATION ON PAGE 10.*

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CONNECTIONS - CONT.

Z•600 COMM CONTROLLER CONNECTIONS-*cont.*

PZ6BX PC BOARD CONNECTIONS (continued)

USING AN EXTERNAL POWER SUPPLY FOR OVERRIDE CONTROL

As stated on the previous page, systems exceeding the maximum of two Volume Controls with Override will require the use of an external +12VDC, 1.5A power supply (ELAN Z•027).

The Z•027 plugs into the jack on the front of the PZ6BX labeled “VCO”. Plugging a Z•027 power supply into the VCO jack automatically disconnects the Z•600’s internal power supply.

Exceeding the maximum volume control with override specifications for the Z•600's internal power supply may render some or all override controls inoperable.

CONNECTING MORE THAN FOUR VOLUME CONTROLS WITH OVERRIDE

Since each row of a punchdown connector will accept two 22 or 24 AWG solid conductor wires, the VCO punchdown connector can handle a maximum of 8 ELAN volume controls with the override feature by punching down two volume controls per row (see below).

If additional Volume Control with Override connections are needed, the VC+ and VC- leads from several volume controls can be spliced together and a lead wire punched down to the connector.

NOTE: *Be sure not to exceed the specifications laid out above.*

Exceeding the 1.5A maximum rating for an external +12VDC power supply may cause unwarrantied damage to the Z•600 Comm Controller.

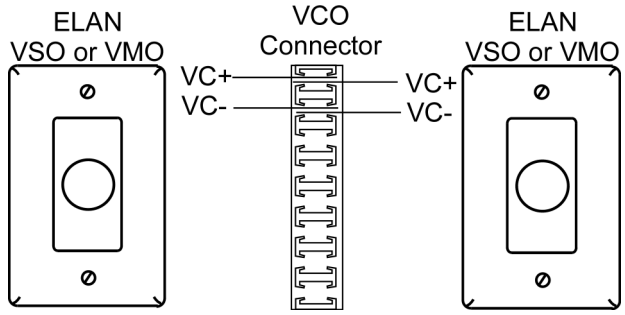

Figure 13

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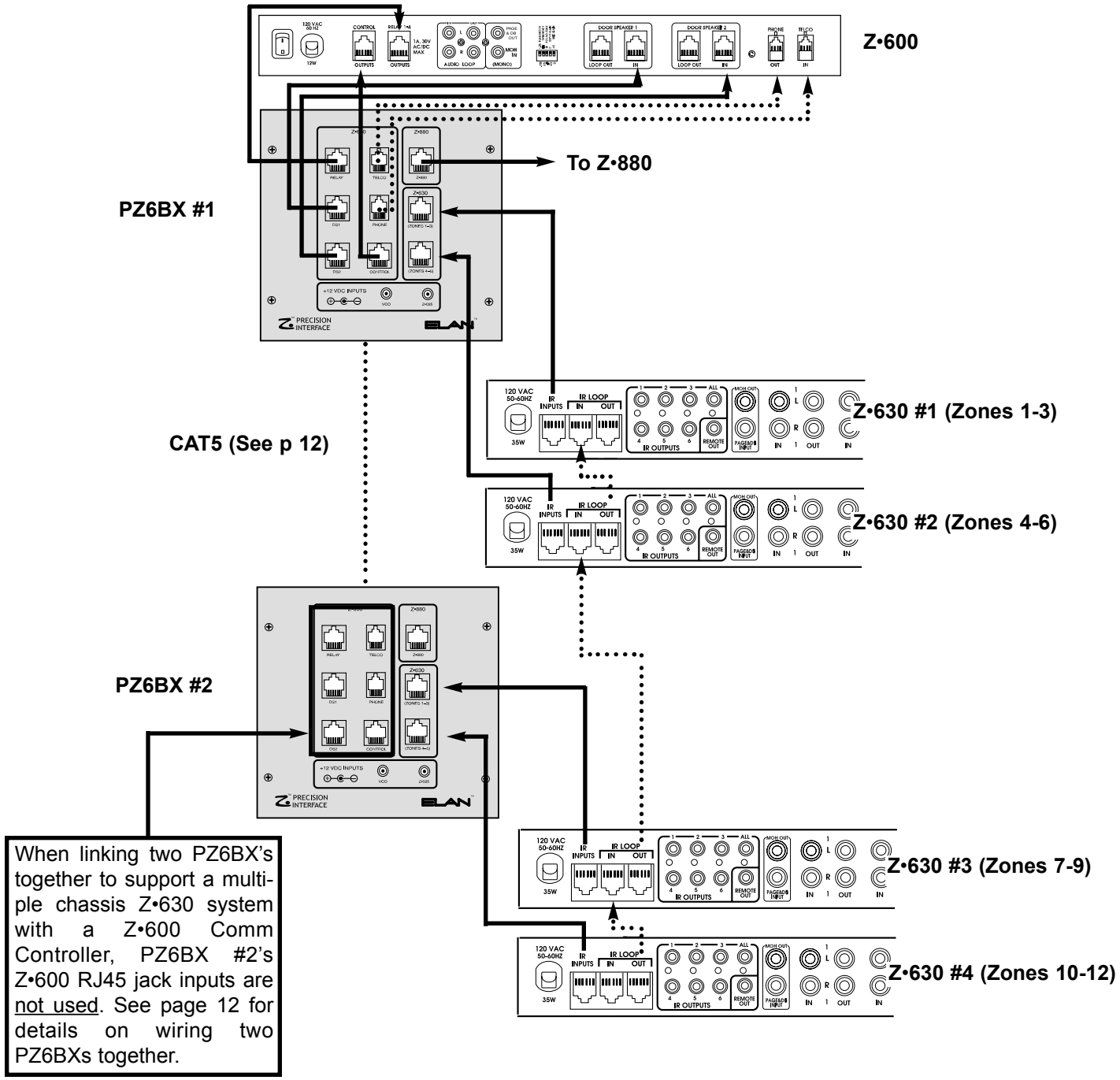
CONNECTIONS - CONT.

LINKING TWO PZ6BXs TOGETHER TO ACCOMMODATE A SYSTEM WITH THREE OR FOUR Z•630 CHASSIS

Use a RJ45-to-RJ45 interconnect cable (ELAN C4545 1M or 2M) to connect the jack labeled IR INPUTS on the back of Z•630 #3 (Zones 7- 9), to the jack labeled Z•630 Zones 1-3 on the front of the SECOND PZ6BX. *Repeat for Zones 10-12 (Z•630 #4) and connect to the jack labeled Zones 4-6 on the SECOND PZ6BX.*


Z•600
To Z•880
PZ6BX #1
CAT5 (See p 12)
Z•630 #1 (Zones 1-3)
Z•630 #2 (Zones 4-6)
PZ6BX #2
Z•630 #3 (Zones 7-9)
Z•630 #4 (Zones 10-12)
When linking two PZ6BX's together to support a multiple chassis Z•630 system with a Z•600 Comm Controller, PZ6BX #2's Z•600 RJ45 jack inputs are not used. See page 12 for details on wiring two PZ6BXs together.

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CONNECTIONS - CONT.

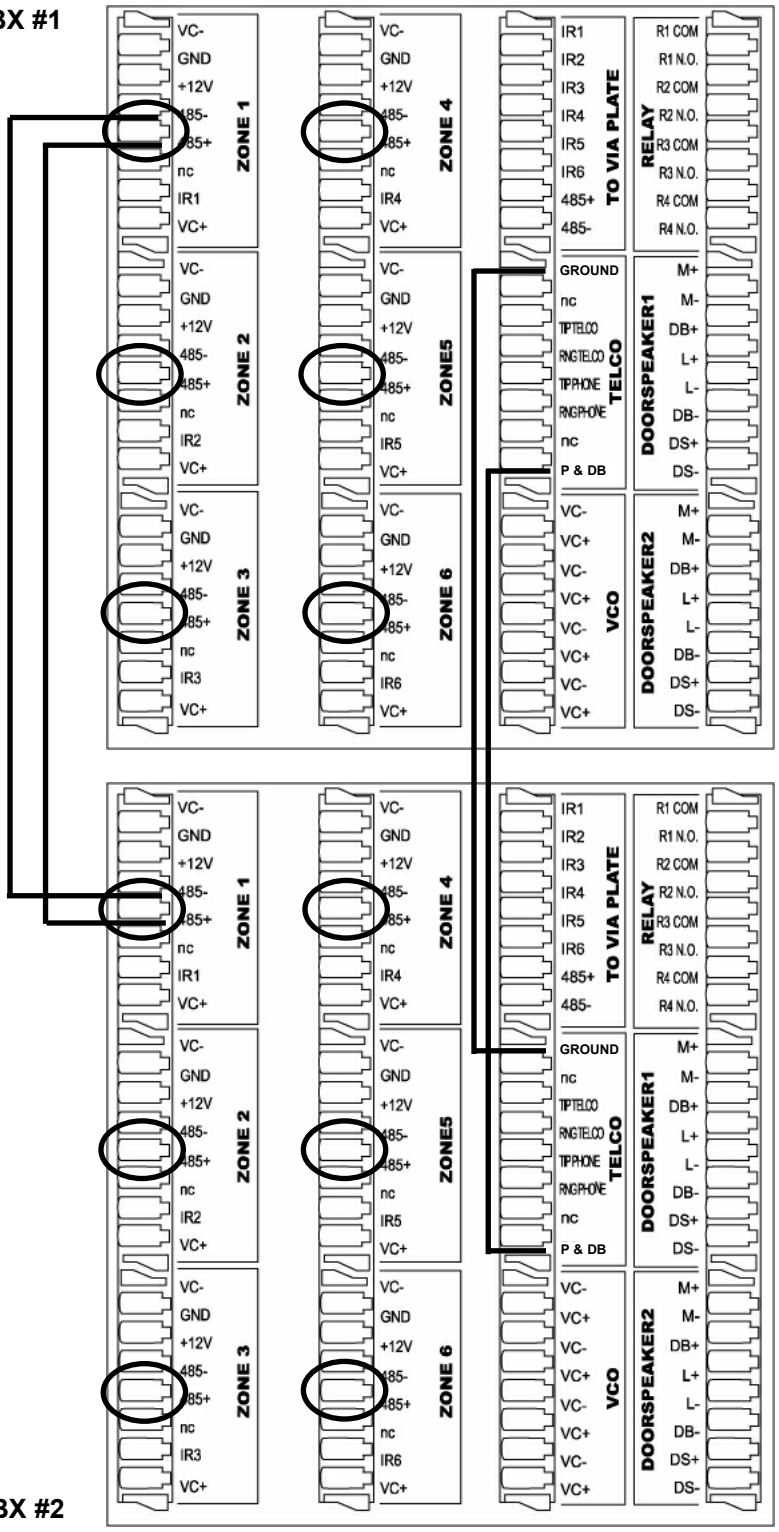
LINKING TWO PZ6BXs TOGETHER TO ACCOMMODATE A SYSTEM WITH THREE OR FOUR Z•630 CHASSIS - cont.

The PZ6RM enables the RS485+, RS485-, PAGE & DOORBELL CONTROL, as well as the PZ6RM's GROUNDs to be linked.

This configuration enables the the connection of as many as four Z•630 chassis, and facilitates the neat and clean termination of all Z•System wiring.

If three or four Z•630 chassis are to be linked using two PZ6BXs, the diagram to the right details the connections of the RS485+, RS485-, Z•600 PAGE & DOORBELL, and GROUND connections between the two PZ6BXs.

NOTE: *The RS485 data bus is common, therefore any of the RS485 data bus connections (circled) may be used to link the first PZ6BX to the second PZ6BX.*



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CONNECTIONS - CONT.

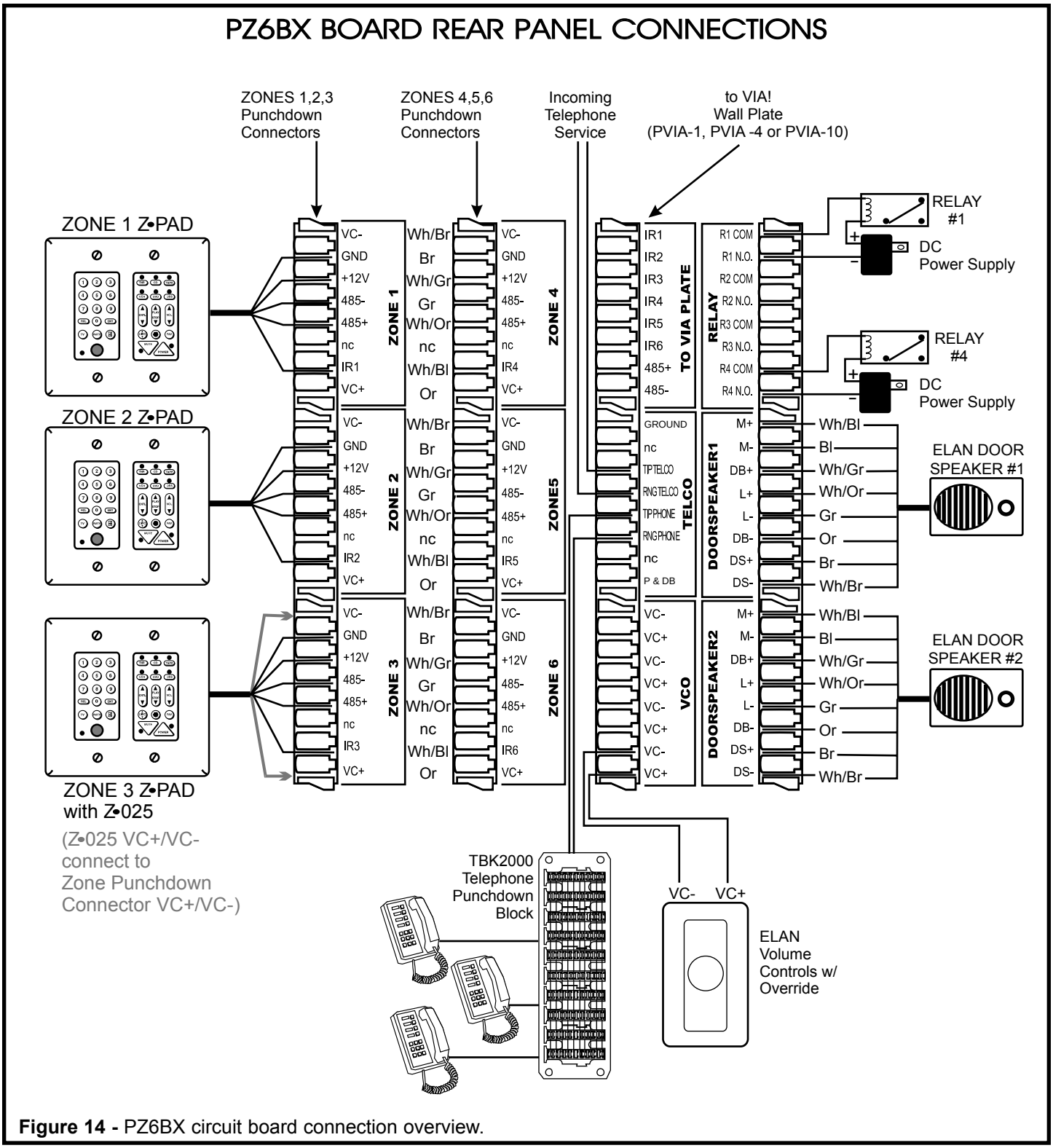
PZ6BX BOARD REAR PANEL CONNECTIONS
ZONES 1,2,3 Punchdown Connectors
ZONES 4,5,6 Punchdown Connectors
Incoming Telephone Service
to VIA! Wall Plate (PVIA-1, PVIA -4 or PVIA-10)
ZONE 1 Z•PAD
ZONE 2 Z•PAD
ZONE 3 Z•PAD with Z•025
(Z•025 VC+/VC- connect to Zone Punchdown Connector VC+/VC-)
ZONE 1
ZONE 2
ZONE 3
ZONE 4
ZONE5
ZONE 6
VC- GND +12V 485- 485+ nc IR1 VC+
VC- GND +12V 485- 485+ nc IR2 VC+
VC- GND +12V 485- 485+ nc IR3 VC+
Wh/Br Br Wh/Gr Gr Wh/Or nc Wh/Bl Or
VC- GND +12V 485- 485+ nc IR4 VC+
VC- GND +12V 485- 485+ nc IR5 VC+
VC- GND +12V 485- 485+ nc IR6 VC+
TO VIA PLATE
IR1 IR2 IR3 IR4 IR5 IR6 485+ 485-
RELAY
R1 COM R1 N.O. R2 COM R2 N.O. R3 COM R3 N.O. R4 COM R4 N.O.
RELAY #1
DC Power Supply
RELAY #4
DC Power Supply
TELCO
GROUND nc TIPTELCO RNGTELCO TIPPHONE RNGPHONE nc P & DB
DOORSPEAKER1
M+ M- DB+ L+ L- DB- DS+ DS-
Wh/Bl Bl Wh/Gr Wh/Or Gr Or Br Wh/Br
ELAN DOOR SPEAKER #1
VCO
VC- VC+ VC- VC+ VC- VC+ VC- VC+
DOORSPEAKER2
M+ M- DB+ L+ L- DB- DS+ DS-
Wh/Bl Bl Wh/Gr Wh/Or Gr Or Br Wh/Br
ELAN DOOR SPEAKER #2
TBK2000 Telephone Punchdown Block
VC- VC+
ELAN Volume Controls w/ Override

Figure 14 - PZ6BX circuit board connection overview.

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Limited Warranty

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This warranty shall not apply (a) to equipment not manufactured by ELAN, (b) to equipment which shall have been installed by other than an authorized ELAN installer, (c) to installed equipment which is not installed to ELAN’s specifications, (d) to equipment which shall have been repaired or altered by others than ELAN, (e) to equipment which shall have been subjected to negligence, accident, or damage by circumstances beyond ELAN’s control, including, but not limited to, lightning, flood, electrical surge, tornado, earthquake, or any other catastrophic events beyond ELAN’s control, or to improper operation, maintenance or storage, or to other than normal use of service. With respect to equipment sold by, but not manufactured by ELAN, the warranty obligations of ELAN shall in all respects conform and be limited to the warranty actually extended to ELAN by its supplier. The foregoing warranties do not cover reimbursement for labor, transportation, removal, installation, or other expenses which may be incurred in connection with repair or replacement.

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